

REMARKS

Claim Rejections – 35 U.S.C. § 102/§ 103

The Examiner has rejected claim 1 under 35 USC 102(e) as being anticipated by Hsiung et al. (U.S. Patent No. 6,174,812 B1). The Examiner has rejected claims 5 and 6 under 35 USC 103(a) as being unpatentable over Hsiung et al. ('812 B1) in view of Besser (U.S. Patent No. 6,368,967 B1). The Examiner has rejected claims 18, 19 and 21 under 35 USC 103(a) as being unpatentable over Hsiung et al. ('812 B1) in view of Pramanick et al. (U.S. Patent No. 6,117,770). The Applicant respectfully traverses. The cited references do not teach all of the elements of the Applicant's claimed invention. In particular, the cited references do not teach the element of independent claim 1 of "depositing a metal layer comprising copper and an additional metal species comprising **beryllium** over a semiconductor wafer surface" or the element of independent claim 5 of "depositing a metal film over a semiconductor wafer surface [and] introducing an additional metal species comprising **beryllium** to the metal film." None of the cited references teach adding beryllium to the deposited metal layer or metal film. In contrast, Hsiung teaches a copper-palladium alloy layer 23 that is electroplated over a inter-metal dielectric layer 20 (Fig. 2A – 2B, Col. 2 lines 49 – 54.) Besser teaches electroplating copper into openings in a dielectric layer (Abstract.) Pramanick teaches a method for implanting copper conductive layers in channel or via openings with alloying elements, such as magnesium, boron, tin, and zirconium (Abstract.) Therefore, the Applicant respectfully submits that the independent claims 1 and 5 and the claims that depend upon and incorporate the limitations of claims 1 and 5 are not anticipated or rendered obvious by the cited references, either individually or in combination.

Appl. No. 09/751,215
Preliminary Amendment dated August 4, 2004
Reply to Office Action of May 4, 2004

If there are any additional charges, please charge Deposit Account No. 02-2666.

Respectfully submitted,

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Date: 8/4/, 2004



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